

WHAT IS CLAIMED IS:

1. A telecommunication device for use in a telephone network system, for converting pulse dialed digits in subscriber lines at a CO end, into DTMF signals, comprising:
a plurality of loop current detection means, wherein each loop current detection means constantly monitors a loop current in a subscriber line at the CO end and detects a presence of pulses when the digits are dialed and subsequently generates signals;
a PLSI (programmable large scale integrated circuit) unit for accepting the signals from the plurality of the loop current detection means in parallel and converting all parallel signals into a serial stream;
a DSP (digital signal processing) unit for accepting the serial stream from the PLSI unit and converting the serial stream into the DTMF signals;
a DAC (digital to analog converter) unit for accepting the DTMF signals from the DSP unit and converting the DTMF signals into corresponding analog signals; and
a plurality of line injection units for accepting the analog signals from the DAC units and injecting the analog signals into the subscriber lines,
wherein the telecommunication device is connected in parallel with the subscriber lines at the CO end of the telephone network system.
2. A telecommunication device according to claim 1, wherein the pulse dialed digits are overdialed pulse digits.
3. A telecommunication device according to claim 1, wherein each loop current detection means has a high impedance.
4. A telecommunication device according to claim 1, wherein each loop current detection means generates a one bit signal when the loop current is detected.
5. A telecommunication device according to claim 1, further comprising a microcontroller for controlling operations for configuration and statistical purposes.

6. A telecommunication device according to claim 1, further comprising a network interface for interfacing with a network.
7. A telecommunication device according to claim 1, further comprising a communication port interface to interface with a communication port.
8. A telecommunication method for converting a pulse dialed digit into a DTMF signal in a subscriber line at a CO end, comprising the following steps of:
 - constantly monitoring a loop current in the subscriber line at the CO end;
 - detecting a presence of pulses when a digit is dialed and counting said pulses;
 - detecting delays between the pulses;
 - converting the pulses into the DTMF signal;
 - converting the DTMF signal into an analog signal; and
 - injecting the analog signal into the subscriber line.
9. A telecommunication method according to claim 8, wherein the pulse dialed digit in the subscriber line at the CO end is an overdialed pulse digit.
10. A telecommunication device for use in a telephone network system, for converting a pulse dialed digit in a subscriber line at a subscriber's end, into a DTMF signal, comprising:
 - a loop current detection means for constantly monitoring a loop current in the subscriber line at the subscriber's end and detecting a presence of pulses when the digit is dialed and subsequently generating a signal;
 - a microprocessor for accepting the signal and converting the signal into the DTMF signal;
 - a DAC (digital to analog converter) unit for receiving the DTMF signal from the microprocessor and generating an appropriate analog signal; and
 - an injection circuit unit for accepting the analog signal from the DAC unit and for injecting the analog signal into the subscriber line,wherein the telecommunication device is connected in parallel with the subscriber line at the subscriber's end.

11. A telecommunication device according to claim 10, wherein the pulse dialed digit in the subscriber line at the subscriber's end is an overdialed pulse digit.
12. A telecommunication device according to claim 10, wherein the loop current detection means has a high impedance.
13. A telecommunication device according to claim 10, wherein the loop current detection means generates a one bit signal when the loop current is detected.
14. A telecommunication device according to claim 10, wherein the microprocessor programs the DAC unit via address and data lines.
15. A telecommunication device according to claim 10, wherein the telephone network system is a wireless system.
16. A telecommunication method for converting a pulse dialed digit in a subscriber line at a subscriber's end, into a DTMF signal using a device as defined in claim 10, comprising the following steps of:
 - constantly monitoring a loop current in the subscriber line at the subscriber's end;
 - detecting a presence of pulses when the digit is dialed and counting the pulses;
 - detecting delays between the pulses;
 - converting the pulses into the DTMF signal;
 - converting the DTMF signal into an analog signal; and
 - injecting the analog signal into the subscriber line.
17. A telecommunication method according to claim 16, wherein the pulse dialed digit in the subscriber line at the subscriber's end, is an overdialed pulse digit.